

SONY.

3-750-719-21 (1)

TRINITRON® Color Video Monitor

PVM-1944Q

PVM-1942Q

Operating Instructions Page 2

Before operating the unit, please read this manual thoroughly and retain it for future reference.

Mode d'emploi Page 16

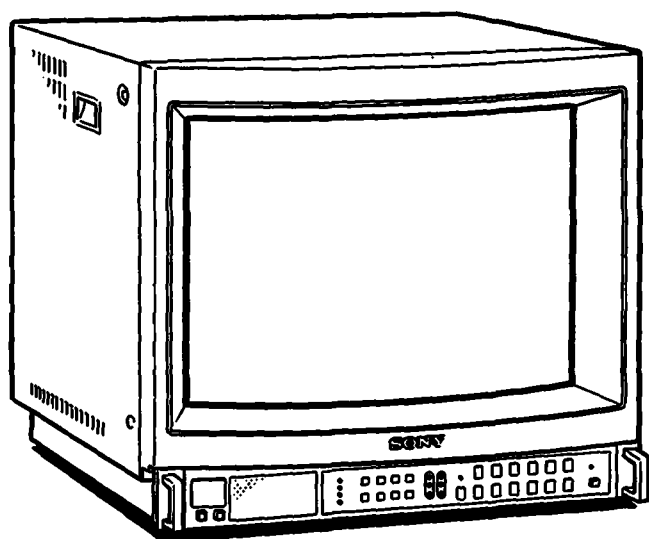
Avant la mise en service de cet appareil, prière de lire attentivement ce mode d'emploi que l'on conservera pour toute référence ultérieure.

Owner's Record

The model and serial numbers are located on the rear.

Record the model and serial numbers in the spaces provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. _____ Serial No. _____

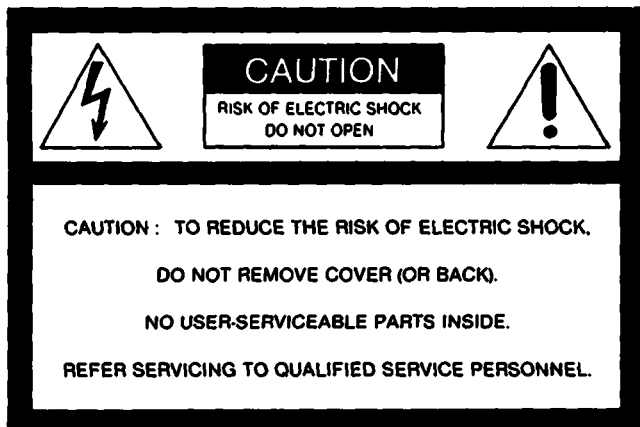


This illustration shows PVM-1944Q.

Cette illustration représente le modèle PVM-1944Q.

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

For the customers in the USA

Warning — This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Important—To insure that the complete system (including this peripheral) is capable of complying with the FCC requirements, it is recommended that the user make sure that the individual equipment of the complete system has a label with one of the following statements.

"This equipment has been tested with a Class A Computing Device and has been found to comply with Part 15 of FCC Rules."

-or-

"This equipment complies with the requirements in Part 15 of FCC Rules for a Class A Computing Device."

-or equivalent.

Be sure to connect the AC power cord to a grounded outlet.

For the customers in Canada

This apparatus complies with the Class A limits for radio noise emissions set out in Radio Interference Regulations.

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Precautions

On safety

- Operate the unit only on 120 V AC.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it is not to be used for several days or more.
- To disconnect the AC power cord, pull it out by grasping the plug. Never pull the cord itself.

On installation

- Allow adequate air circulation to prevent internal heat build-up.
Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Do not install the unit in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.

On cleaning

To keep the unit looking brand-new, periodically clean it with a soft cloth. Stubborn stains may be removed with a cloth lightly dampened with a mild detergent solution. Never use strong solvents such as thinner or benzene, or abrasive cleansers since these will damage the cabinet. As a safety precaution, unplug the unit before cleaning it.

On repacking

Do not throw away the carton and packing materials. They make an ideal container in which to transport the unit. When shipping the unit to another location, repack it as illustrated on the carton.

If you have any questions about this unit, contact your authorized Sony dealer.

Features

This chart shows the various features which your model has (indicated as "Yes").

Features	PVM-1944Q	PVM-1942Q
Automatic beam current feedback circuit	Yes	Yes
SMPTE C phosphor	Yes	Yes
Super Fine Pitch Trinitron picture tube	Yes	Yes
Component input/output	Yes	No
Analog RGB input/output	Yes	Yes
Digital RGB input (9-pin)	No	Yes
Y/C input (4-pin DIN)	Yes	Yes
VTR input (8-pin)	Yes	Yes
Control S input/output	Yes	Yes
Automatic release of BNC-type input connector termination	Yes	Yes
Color systems available	PAL, SECAM, NTSC ^{3.58} NTSC ^{4.43}	
Comb filter	Yes	Yes
3.58 (MHz) TRAP button (NTSC ^{3.58} only)	Yes	Yes
Blue only mode	Yes	Yes
Underscan mode	Yes	Yes
Horizontal/vertical delay mode	Yes	Yes
User's control memory	Yes	No
External sync input/output	Yes	Yes
Color temperature selector	Yes	Yes
Light-touch picture adjustment buttons	Yes	Yes
Auto/manual degaussing	Yes	Yes
Tally lamp	Yes	No
EIA standard 19-inch rack mounting	Yes	Yes

Automatic beam current feedback circuit

The automatic beam current feedback circuit compensates for the beam distortion, secular distortion of the cathode-ray tube, etc., and always reproduces the same white display on the screen. This allows an extended use of the monitor.

Super Fine Pitch Trinitron picture tube

The Super Fine Pitch Trinitron picture tube (0.4 mm aperture grill) gives high resolution picture. Horizontal resolution is more than 600 TV lines at the center of the picture. When used as a character display, up to 2,000 characters (80 characters/line $\times$ 25 lines) can be displayed with great clarity.

Analog RGB/component connector (PVM-1944Q only)

Analog RGB and component signals of a video equipment can be input through this connector. The signals are selected by the COMPO/RGB selector on the rear panel.

Analog RGB connector (PVM-1942Q only)

Analog RGB signal of a video equipment can be input through this connector.

Digital RGB input connector (PVM-1942Q only)

Digital RGB signal from a microcomputer can be input through this connector.

Y/C input connector

The video signal split into the chrominance signal (C) and the luminance signal (Y) can be input through this connector, eliminating the interference between the two signals which tends to occur in a composite video signal and assuring the video quality.

VTR input connector

When connected to a VTR having the 8-pin TV connector, video and audio signals can be fed through this connector with a single cable.

Control S connector

When this connector is connected to the "control S" output of other equipment, the remote controls of the aperture, brightness, chroma, phase, contrast and volume settings are possible.

Automatic release of BNC-type connector termination

The BNC-type input connector is terminated at 75 ohms inside when the BNC-type output connector is open. When a cable is connected to the BNC-type output connector, the 75-ohm termination is automatically released, and the signal input through the IN connector is output from the corresponding OUT connector.

Four color systems available

The monitor can display PAL, SECAM, NTSC_{3.58} and NTSC_{4.43}* signals. The appropriate color system is selected automatically.

* A signal of NTSC_{4.43} is obtained by playing back NTSC-recorded video cassettes with a video tape recorder/player especially designed for use with this system.

3.58 (MHz) TRAP button (NTSC_{3.58} only)

This button can be used to eliminate the dot interference to the luminance signal appearing between colors in the horizontal direction, which is one of the characteristics of the comb filter.

Comb filter

When NTSC video signals are received, a comb filter activates to increase the resolution, resulting in fine picture detail without color spill or color noise.

Blue only mode

In the blue only mode, an apparent monochrome display is obtained with all three cathodes driven with a blue signal. This facilitates color saturation and phase adjustments and observation of VTR noise.

Underscan mode

The signal normally scanned outside of the screen can be monitored in the underscan mode.

Note

The bright scanning lines which may appear on the top edge of the screen when the monitor is in the underscan mode are caused by an internal test signal, rather than the input signal.

Horizontal/vertical delay mode

The horizontal and vertical sync signals can be checked simultaneously in the H/V delay mode.

User's control memory (PVM-1944Q only)

The desired aperture, brightness, chroma, and phase levels can be memorized.

External sync input

When the EXT SYNC (or ANALOG/DIGITAL (EXT SYNC)) button is depressed, the monitor can be operated on the sync signal supplied from an external sync generator.

Color temperature selector

Color temperature of either 9,300°K or 6,500°K is selectable with the COLOR TEMP selector. For precise adjustment, use the BIAS and GAIN adjustment controls.

Light-touch picture adjustment buttons

The aperture, brightness, chroma, phase, contrast and volume buttons can be adjusted by touching the buttons lightly. The adjusted settings will be stored in memory even when the monitor is turned off.

Auto/manual degaussing

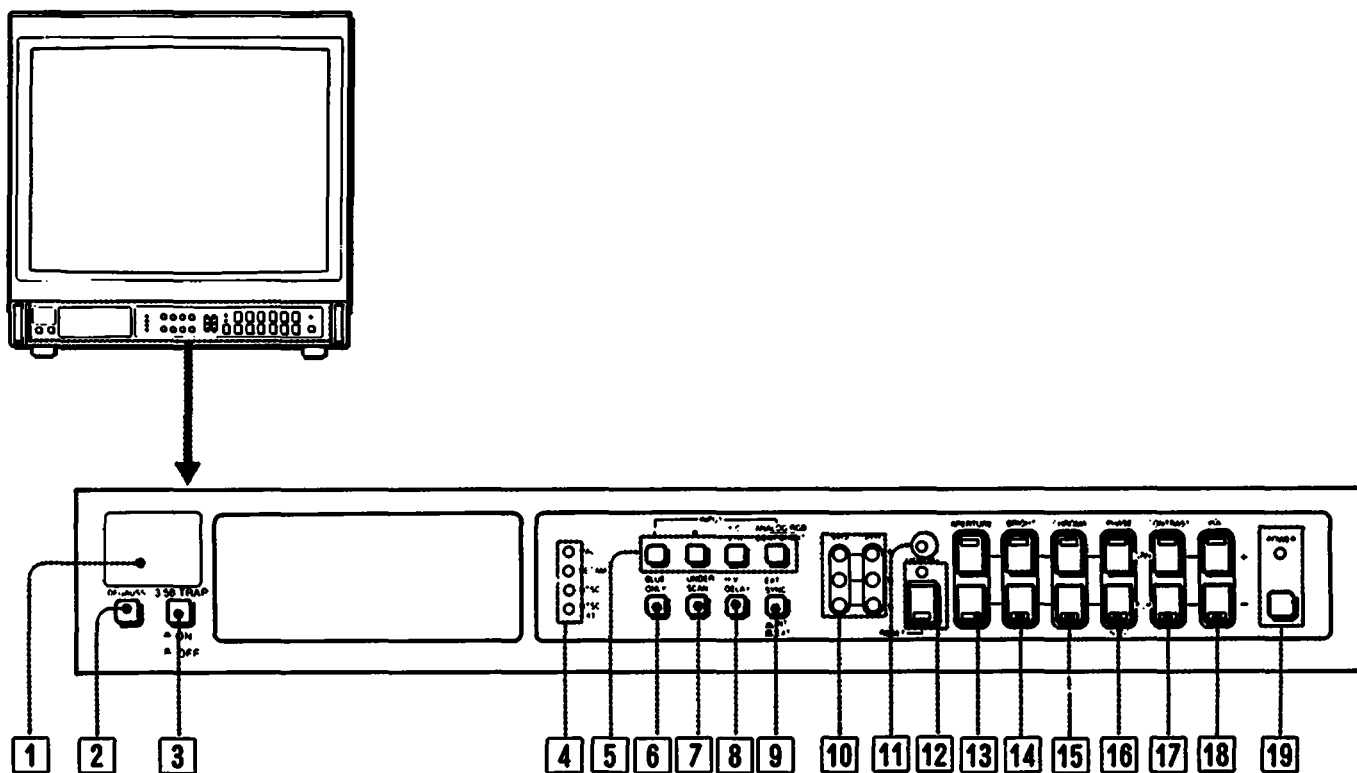
Degaussing of the screen can be performed automatically when the power is turned on, or manually by pressing the DEGAUSS button.

EIA standard 19-inch rack mounting

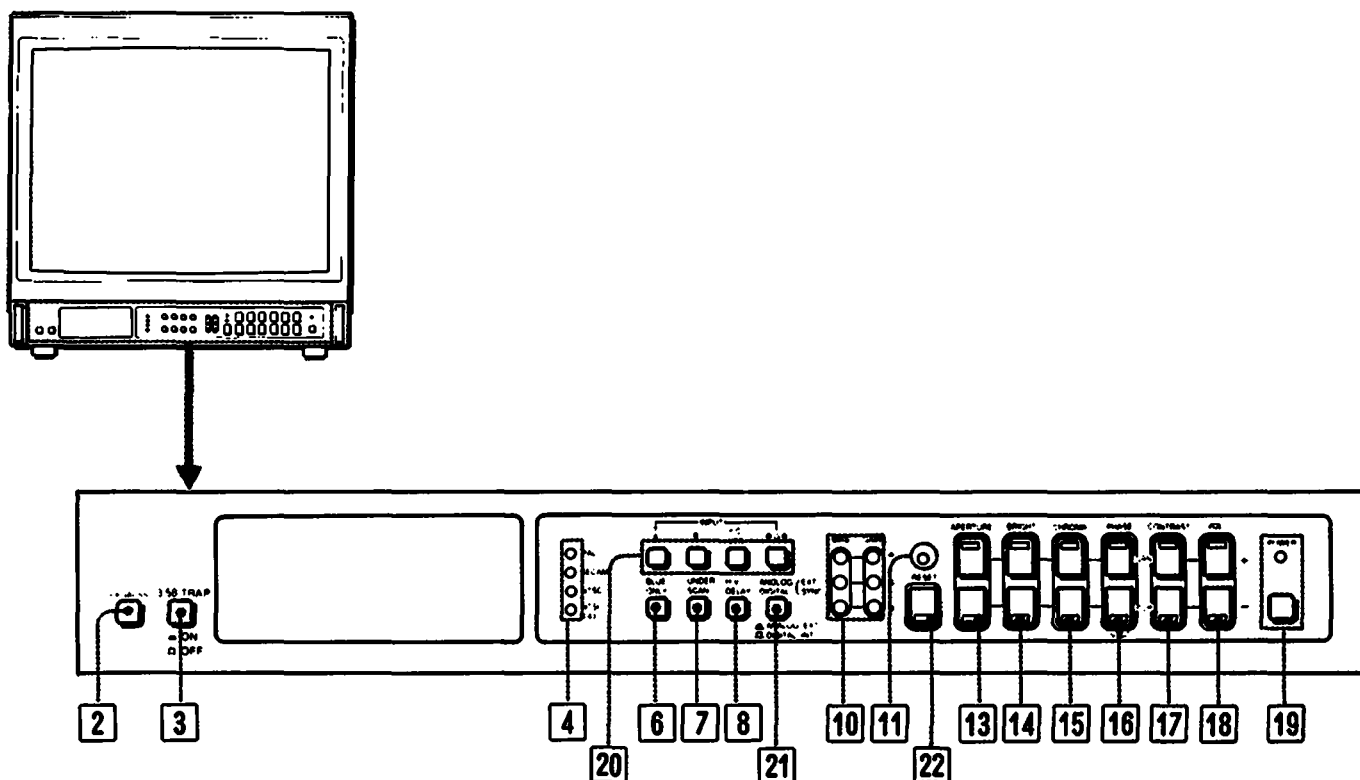
By using an optional SLR101 slide rail, the monitor can be mounted in an EIA standard 19-inch rack. For details on mounting, see the appropriate instruction manual.

Location and Function of Parts and Controls

Front panel PVM-1944Q



Front panel PVM-1942Q



1 Tally lamp

Lights up when the video camera connected to this unit is selected, indicating that the picture is being recorded. The indication number can be attached on the lamp using the supplied sheets (see page 15).

2 DEGAUSS button

Press this button momentarily. The screen will be demagnetized for approximately 5 seconds. Wait for 10 minutes or more before activating this button again.

3 3.58 TRAP button (NTSC3.58 only)

Normally set this button in released position ($\square$ OFF) to obtain fine picture detail without color spill or color noise. When a microcomputer, such as APPLE II, is connected and stripes appear, depress this button ($\blacksquare$ ON).

4 Color system indicators

The indicator of the color system being received lights up in red.

5 INPUT select buttons

Press to select the program to be monitored.

A: for a signal fed through the LINE A connectors.

B: for a signal fed through the LINE B connectors.

Y/C/VTR: for a signal fed through the Y/C-INPUT connectors or VTR connector.

When both the Y/C-INPUT and VTR connectors are connected to video equipment, the input signal fed through the Y/C-INPUT connector has priority over the one fed through the VTR connector.

ANALOG RGB/COMPONENT: for a signal fed through the ANALOG RGB/COMPONENT connectors.

For connection, refer to the explanation of ANALOG RGB/COMPONENT connectors on page 11.

6 BLUE ONLY button

Depress to turn off the red and green signals. A blue signal is displayed as an apparent monochrome picture on the screen. This facilitates "chroma" and "phase*" control adjustments and observation of VTR noise.

* "Phase" control adjustment is effective only for the NTSC signals.

7 UNDER SCAN button

Depress for underscanning. The display size is reduced by approximately 3% so that four corners of the raster are visible.

8 H-V DELAY button

Depress to observe the horizontal and vertical sync signals at the same time.

The horizontal sync signal is displayed in the left quarter of the screen; the vertical signal is displayed near the center of the screen.

9 EXT SYNC (external sync) button

Normally keep this button released (INT). The monitor operates on the sync signal from the displayed composite video signal.

To operate the monitor on an external sync signal fed through the EXT SYNC connector on the rear panel, depress the button (EXT).

10 BIAS and GAIN adjustment controls

Used for white balance adjustment.

Gain and BIAS controls are provided for the R (red), G (green) and B (blue) screens.

BIAS: Adjust the white balance and brightness of the screen at the lowlight with these controls.

GAIN: Adjust the white balance and contrast of the screen at the highlight with these controls.

11 Response indicator

Flashes when the MEMORY (PVM-1944Q only), RESET, APERTURE, BRIGHT, CHROMA, PHASE, CONTRAST, or VOL button is pressed.

12 MEMORY button and RESET button

After setting the APERTURE, BRIGHT, CHROMA, and PHASE controls to the desired levels, press the MEMORY button with a pencil or a similar object so that these levels can be memorized and the response indicator lights up.

When the RESET button is pressed, the above control settings, and not the factory set levels, will be restored. To change the memorized levels, repeat the above operations.

To release the memorized levels and restore the factory set levels, while pressing the MEMORY button, press the RESET button.

13 APERTURE buttons

Press + for more sharpness or - for less.

14 BRIGHT (brightness) buttons

Press + for more brightness or - for less.

Location and Function of Parts and Controls

15 CHROMA buttons

Press + for more color intensity or – for less.

16 PHASE buttons

This button is effective only for the NTSC3.58 and NTSC4.43 color system.

Press GRN (green) to make the skin tones greenish or PUR (purple) to make them purplish.

Note

The APERTURE, CHROMA, PHASE control settings have no effect on the pictures of analog RGB or digital RGB signals.

17 CONTRAST buttons

Press + to make the contrast, color intensity and brightness stronger or – to make them weaker.

18 VOL (volume) buttons

Press + for more volume or – for less.

19 POWER switch and indicator

Depress to turn the monitor on.

The indicator will light up in green.

Press the switch again to turn the monitor off.

20 INPUT select buttons

Press to select the program to be monitored.

A: for a signal fed through the LINE A connectors.

B: for a signal fed through the LINE B connectors.

Y/C/VTR: for a signal fed through the Y/C-INPUT connectors or VTR connector.

When both the Y/C-INPUT and VTR connectors are connected to video equipment, the input signal fed through the Y/C-INPUT connector has priority over the one fed through the VTR connector.

RGB: for a signal fed through the ANALOG RGB connectors or DIGITAL RGB connector.

21 ANALOG/DIGITAL (EXT SYNC) button

This button functions as ANALOG/DIGITAL selector and EXT SYNC selector.

As ANALOG/DIGITAL selector

Depress to monitor a signal fed through the ANALOG RGB connectors.

Release to monitor a signal fed through the DIGITAL RGB connector.

For EXT SYNC selector

Depress to operate the monitor on an external sync signal fed through the EXT SYNC connector on the rear panel (EXT).

Release to operate the monitor on the sync signal from the displayed composite video signal (INT).

22 RESET button

Press to return the PHASE, CHROMA, BRIGHT and APERTURE control settings to the factory set levels.

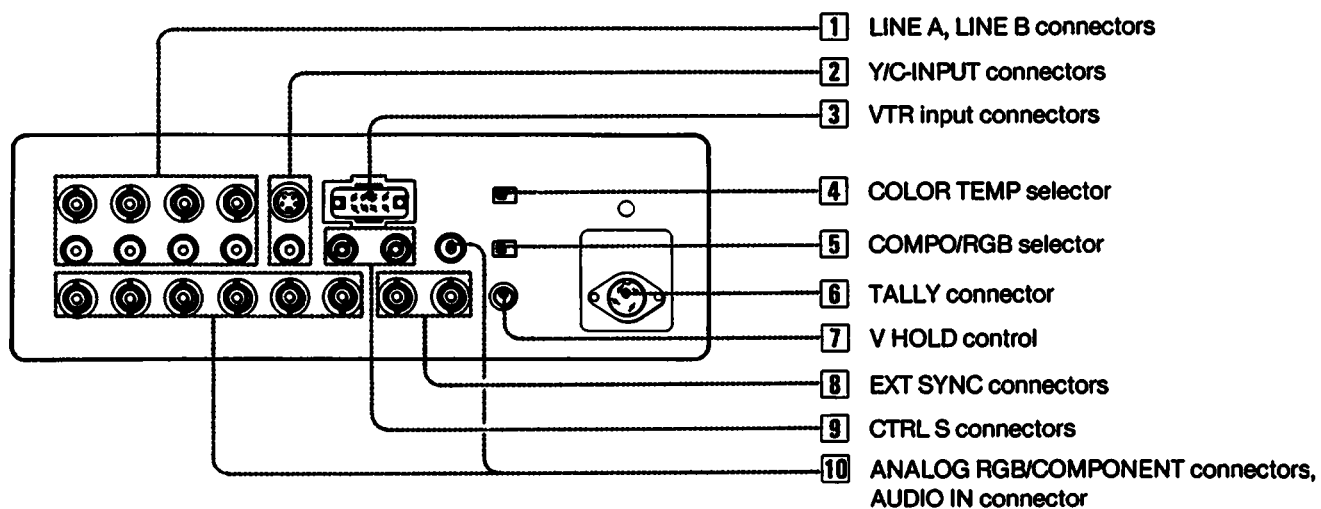
Picture Adjustment Buttons

The picture adjustment buttons of each monitor operate in the following input mode (indicated as "Yes").

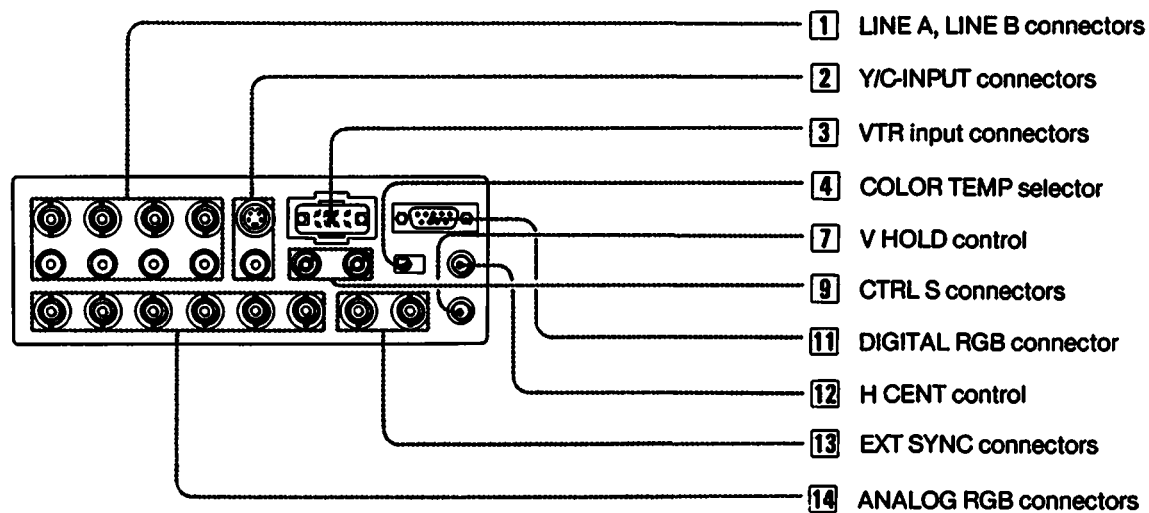
Model	Input mode	APERTURE	BRIGHT	CHROMA	PHASE	CONTRAST	VOL
PVM-1944Q	• LINE A, LINE B • Y/C • VTR	Yes	Yes	Yes	Yes (NTSC only)	Yes	Yes
	Analog RGB	No	Yes	No	No	Yes	Yes
	Component	Yes	Yes	Yes	No	Yes	Yes
PVM-1942Q	• LINE A, LINE B • Y/C • VTR	Yes	Yes	Yes	Yes (NTSC only)	Yes	Yes
	• Digital RGB • Analog RGB	No	Yes	No	No	Yes	No

Location and Function of Parts and Controls

Rear panel PVM-1944Q



Rear panel PVM-1942Q



1 LINE A, LINE B connectors

Two groups (A and B) of line input connectors for the composite video and audio signals and their loop-through output connectors.

To monitor the input signal fed through these connectors, press the A or B input select button on the front panel.

VIDEO IN (BNC type): Connect to the video output of a video equipment, such as a VTR or a color video camera. For a loop-through connection, connect to the video output of another monitor.

VIDEO OUT (BNC type): Loop-through output of the VIDEO IN connector. Connect to the video input for a VTR or another monitor.

When the cable is connected to this connector, the 75-ohms termination of the input is automatically released, and the signal input to the VIDEO IN connector is output from this connector.

AUDIO IN (phono jack): Connect to the audio output of a VTR or to a microphone via a suitable microphone amplifier. For a loop-through connection, connect to the audio output of another monitor.

AUDIO OUT (phono jack): Loop-through output of the AUDIO IN jack. Connect to the audio input of a VTR or another monitor.

2 Y/C-INPUT connectors

VIDEO (4-pin DIN): Connect to the Y/C separate output of a video camera or a VTR.

AUDIO (phono jack): Connect to the audio output of a video camera or a VTR.

To monitor the input signal fed through these connectors, press the Y/C/VTR button on the front panel.

3 VTR input connectors (8-pin)

Line input for the video and audio signals. When connected to the 8-pin TV connector of a VTR, the video and audio playback signal from the VTR can be input through a single cable.

To monitor the input signal fed through this connector, press the Y/C/VTR button on the front panel, with the Y/C-INPUT connectors connected to no outputs.

4 COLOR TEMP (temperature) selector

Select the color temperature position, 9300°K or 6500°K.

5 COMPO (component)/RGB selector

Set to COMPO to monitor component signal fed through the R/R-Y, G/Y, B/B-Y connectors.

Set to RGB to monitor analog R/G/B signal fed through the R/R-Y, G/Y, B/B-Y connectors.

6 TALLY connector (4-pin)

Connect the tally signal of a video camera.

7 V HOLD (vertical hold) control

Turn to stabilize the picture if it rolls vertically.

8 EXT SYNC (external sync) connectors (BNC type)

IN: Connect to the output of a sync generator.

To use the sync signal fed through this connector, depress the EXT SYNC button.

OUT: Loop-through output of the SYNC IN connector. Connect to the SYNC input of a video camera.

When the cable is connected to this connector, the 75-ohms termination of the input is released, and the signal input to the IN connector is output from this connector.

9 CTRL S (control S) connectors (minijack)

For remote control of the APERTURE, BRIGHT, CHROMA, PHASE, CONTRAST and VOL control buttons.

IN: Connect to the "control S" output of other equipment.

OUT: Connect to the CTRL S IN connector of another monitor by using a connecting cord (miniplug ↔ miniplug).

10 ANALOG RGB/COMPONENT connectors (BNC type)

R/R-Y IN, G/Y IN, B/B-Y IN:

To monitor the analog R/G/B signal, connect to the analog R/G/B signal outputs of a video camera having no sync signal.

Set the COMPO/RGB selector on the rear panel to RGB and press the ANALOG RGB/COMPONENT button on the front panel. When the EXT SYNC button is released, the monitor operates on the sync signal from the G channel.

To monitor the component signal, connect to the R-Y/Y-B-Y component signal outputs of a BETACAM video camera. Set the COMPO/RGB selector on the rear panel to COMPO and press the ANALOG RGB/COMPONENT button on the front panel. When the EXT SYNC button is released, the monitor operates on the sync signal from the Y channel.

R/R-Y OUT, G/Y OUT, B/B-Y OUT:

Loop-through outputs of the R/R-Y IN, G/Y IN, B/B-Y IN connectors.

For R/G/B signal, connect to the analog R/G/B signal inputs of a video camera.

For component signal, connect to the R-Y/Y-B-Y component signal inputs of a BETACAM video camera. When the cables are connected to these connectors, the 75-ohms termination of the input is automatically released, and the signal inputs to the R/R-Y IN, G/Y IN, B/B-Y IN connectors are output from these connectors.

AUDIO IN (phono jack): Connect to the audio output of video equipment when the analog R/G/B or component signal is input.

Location and Function of Parts and Controls

11 DIGITAL RGB connector (9-pin)

Connect with a microcomputer having a digital (TTL level) RGB video output.

To monitor the input signal fed through this connector, press the RGB button and keep the ANALOG/DIGITAL (EXT SYNC) button released.

Note

For connection, be sure to use an optional SMF-520 connecting cable.

12 H CENT (horizontal centering) control

When a digital R/G/B signal is monitored, turn to center the picture if it is decentered.

13 EXT SYNC (external sync) connectors (BNC type)

IN: Connect to the output of a sync generator.

To monitor the sync signal fed through this connector, depress the ANALOG/DIGITAL (EXT SYNC) button.

OUT: Loop-through output of the SYNC IN connector.

Connect to the SYNC input of a video camera.

When the cable is connected to this connector, the 75-ohms termination of the input is released, and the signal input to the IN connector is output from this connector.

14 ANALOG RGB connectors (BNC type)

R/G/B IN: Connect to the analog R/G/B outputs of a video camera.

To monitor a signal fed through these connectors, press the RGB button and depress the ANALOG/DIGITAL (EXT SYNC) button.

R/G/B OUT: Loop-through outputs of the R/G/B IN connectors. Connect to the analog R/G/B inputs of a video camera.

When the cable is connected to these connectors, the 75-ohms termination of the input is released, and the signal input to the R/G/B IN connectors is output from these connectors.

Specifications

Video signal

Frequency response

Line input: More than 7 MHz (−3 dB)
Y/C input: More than 8 MHz (−3 dB)
Component input (Y/R-Y/B-Y): More than 8 MHz (−3 dB)
R.G.B. input (analog): More than 9 MHz (−3 dB)

Chrominance subcarrier attenuation

3.58 MHz: Less than −30 dB (comb filter)
4.43 MHz: Less than −36 dB (trap filter)

Band pass

3.58 MHz: 2 MHz equiband
4.43 MHz: 2 MHz equiband

Chrominance/luminance time error

Composite: Less than ±100 ns
Y/C Video: Less than ±50 ns
Component: Less than ±50 ns

Aperture correction

−4.5 to +6.5 dB (at 4.5 MHz)

Synchronization

AFC time constant: 1 msec

Line pull range

Horizontal: ±500 Hz
Vertical: 8 Hz

Picture performance

Normal scan 7% overscan of CRT effective screen area
Under scan 3% underscan of CRT effective screen area
H. linearity error Less than 8%
V. linearity error Less than 7%
Convergence Central area: 0.7 mm (Typical)
Peripheral area: 1.3 mm (Typical)

Raster size stability

H: 1.0%, V: 1.5%

High voltage regulation

4%

Audio output

0.6 W (Max.)

CRT

SMPTE C phosphor

Color temperature

6,500°K/9,300°K (+8MPCD), selectable

Inputs

For both models

VIDEO IN: BNC connector

AUDIO IN: Phono jack

VTR: 8-pin connector (See "VTR connector" on page 14.)

Y/C-INPUT

VIDEO: 4-pin DIN connector (See "Y/C-INPUT connector" on page 15.)

AUDIO: Phono jack

PVM-1944Q only

EXT SYNC: BNC connector

composite sync 1-4 Vp-p, negative, 75 ohms terminated, automatically released when cable is connected to the output connector.

ANALOG RGB/COMPONENT: BNC connector

R, G, B and Y channels: 0.7 Vp-p, ±6 dB, non composite

R-Y and B-Y channels: 0.525 Vp-p, ±6 dB

(Standard color bar signal of 75-percent chrominance)

When the composite signal is fed to the G or Y channels, the monitor can be activated in the internal sync mode.

75 ohms terminated, automatically released when a cable is connected to the output connector.

CTRL S: Minijack

PVM-1942Q only

EXT SYNC: BNC connector

composite sync 1-4 Vp-p, negative, 75 ohms terminated, automatically released when cable is connected to the output connector.

ANALOG RGB: BNC connector

0.7 Vp-p, ±6 dB, non composite

75 ohms terminated, automatically released when cable is connected to the output connector.

DIGITAL RGB: 9-pin connector (See "DIGITAL RGB connector" on page 14.)

CTRL S: Minijack

Outputs

For both models

VIDEO OUT: BNC connector

Loop-through

AUDIO OUT: Phono jack

Loop-through

PVM-1944Q only

EXT SYNC: BNC connector

Loop-through

ANALOG RGB/COMPONENT: BNC connector

Loop-through

CTRL S: Minijack

Loop-through

PVM-1942Q only

SYNC: BNC connector

Loop-through

ANALOG RGB: BNC connector

Loop-through

CTRL S: Minijack

Loop-through

General

AC regulation range

110 – 130 V AC, 50/60 Hz

Power consumption

Approx. 130 W

Operating temperature range

0°C to +35°C (32°F to 95°F)

Dimensions

Approx. 452 × 458 × 513 mm (w/h/d)
(17⁷/₈ × 18¹/₈ × 20¹/₄ inches)

Weight

Approx. 31 kg (68 lb 5 oz)

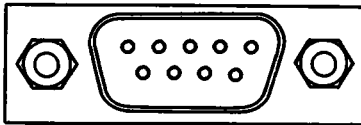
Supplied accessory

Rack mounting bracket (for EIA standard racks)
(1 set)

Specifications

Pin assignment

DIGITAL RGB connector (9-pin)



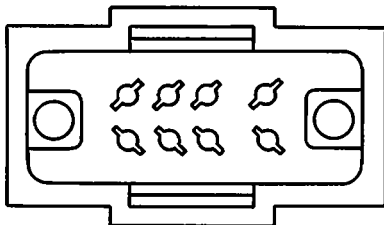
Pin No.	Signal	Signal level
1	GND (ground)	GND
2	GND for the signal	GND
3	Red input	Positive polarity (TTL level)
4	Green input	
5	Blue input	
6	Intensity	↑
7	NC (no connection)	↔
8	H-SYNC	Positive or negative polarity (TTL level)
9	V-SYNC	Same polarity as H-SYNC (TTL level)

Note

If the intensity function of Pin No. 6 is not used, set the internal switch on the Qd board to the B position, and connect the Pin No. 6 to the GND. With this setting, when the positive intensity signal synchronized to the characters on the screen is fed, the luminance of the characters will be increased.

If the specific intensity function, such as that of an IBM microcomputer, is used, set the internal switch on the Qd board to the A position, and feed the intensity control signal to Pin No. 6.

VTR connector (8-pin)



Pin No.	Signal	Description
1	Audio input	-5 dBs, high input impedance (more than 47 kilohms)
2	Video input	Composite 1 Vp-p, sync negative, 75 ohms
3	GND	GND
4	NC	↔
5	GND	GND
6	GND	GND
7	GND	GND
8	GND	GND